Appl. No. 10/809,534
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In response to the Office Action dated February 15, 2006

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AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently amended): A projector for projecting an image to a projection plate, comprising:

a first digital micro-mirror device, with a first micro-mirror disposed thereon;

a second digital micro-mirror device, comprising a plurality of second micro-mirrors disposed thereon; and

a projection light source, emitting a projection beam toward the first digital micro-mirror device;

wherein the first digital micro-mirror device reflects the projection beam from the projection light source to the second digital micro-mirror device, the first micro-mirror is rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the second digital micro-mirror device, the second digital micro-mirror device reflects the projection beam from the first digital micro-mirror device to the projection plate, and the second micro-mirrors are rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on the projection plate,

wherein the projection light source comprises a first color light source, a second color light source, a third color light source and a prism assembly, the first color light source emits a first color beam, the second color light source emits a second color beam, the third color light source emits a third color beam, and the prism assembly combines the first, second, and third color beam into the projection beam,

wherein the first color light source, the second color light source, and the third color light source are disposed on the second digital micro-mirror device.

Claim 2 (Original): The projector as claimed in claim 1, wherein the first digital micro-mirror device further comprises a first chip, with the first micro-mirror disposed thereon.

Claim 3 (Original): The projector as claimed in claim 1, wherein the rotation range of the first micro-mirror is 10°.

Claim 4 (Original): The projector as claimed in claim 1, wherein the second digital micro-mirror device further comprises a second chip, with the second micro-mirrors disposed thereon.

Claim 5 (Original): The projector as claimed in claim 4, wherein the second micro-mirrors are arranged on the second chip along a horizontal axis.

Claim 6 (Original): The projector as claimed in claim 1, wherein the rotation range of the second micro-mirror is 10°.

Claim 7 (Original): The projector as claimed in claim 1, wherein the projection light source is a laser.

Claim 8 (Original): The projector as claimed in claim 7, wherein the power of the laser is less than 0.5w.

Claims 9-10 (canceled)

Claim 11 (Currently amended): The projector as claimed in claim ~~10~~ 1, wherein the prism assembly is disposed on the second digital micro-mirror device.

Claim 12 (Currently amended): The projector as claimed in claim ~~9~~ 1, wherein the projection light source further comprises a first reflector and a second reflector, with the first reflector directing the first color beam to the prism assembly.

Claim 13 (Currently amended): The projector as claimed in claim ~~9~~ 1, wherein the first color beam is a red beam, the second color beam is a green beam, and the third color beam is a blue beam.

Claim 14 (Original): The projector as claimed in claim 1, further comprising a controller, connecting with the projection light source, the first digital micro-mirror device and the second digital micro-mirror device to control the switch of the projection light source and orientations of the first digital micro-mirror device and the second digital micro-mirror device.

Claim 15 (Original): The projector as claimed in claim 1, wherein the projection light source is disposed on the second digital micro-mirror device.

Claim 16 (Original): The projector as claimed in claim 1, wherein the first micro-mirror device, the second micro-mirror device and the projection light source are packaged into a single IC device by IC package process.

Claim 17 (Original): The projector as claimed in claim 1, wherein the first digital micro-mirror device further comprises an opening, through which the projection beam reflected from the second digital micro-mirror device is projected on the projection plate.

Claim 18 (Original): The projector as claimed in claim 1, wherein the projector is applied in a portable electronic apparatus.

Claim 19 (previously presented): The projector as claimed in claim 14, wherein the controller controls the orientations of the first and second digital micro-mirror devices to illuminate a plurality of discrete points on the projection plate with the projection beam to produce a complete image after fast scanning the projection plate.

Claim 20 (previously presented): The projector as claimed in claim 19, wherein the controller disables the projection light source for dark pixels in the complete image.

Claim 21 (New): A projector for projecting an image to a projection plate, comprising:

a first digital micro-mirror device, with a first micro-mirror disposed thereon;

a second digital micro-mirror device, comprising a plurality of second micro-mirrors disposed thereon; and

a projection light source, emitting a projection beam toward the first digital micro-mirror device;

wherein the first digital micro-mirror device reflects the projection beam from the projection light source to the second digital micro-mirror device, the first micro-mirror is rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the second digital micro-mirror device, the second digital micro-mirror device reflects the projection beam from the first digital micro-mirror device to the projection plate, and the second micro-mirrors are rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on the projection plate,

wherein the projection light source is disposed on the second digital micro-mirror device.

Claim 22 (New): A projector for projecting an image to a projection plate, comprising:

a first digital micro-mirror device, with a first micro-mirror disposed thereon;

a second digital micro-mirror device, comprising a plurality of second micro-mirrors disposed thereon; and

a projection light source, emitting a projection beam toward the first digital micro-mirror device;

wherein the first digital micro-mirror device reflects the projection beam from the projection light source to the second digital micro-mirror device, the first micro-mirror is rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the second digital micro-mirror device, the second digital micro-mirror device reflects the projection beam from the first digital micro-mirror device to the projection plate, and the second micro-mirrors are rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on the projection plate,

wherein the first micro-mirror device, the second micro-mirror device and the projection light source are packaged into a single IC device by IC package process.

Claim 23 (New): A projector for projecting an image to a projection plate, comprising:

a first digital micro-mirror device, with a first micro-mirror disposed thereon;

a second digital micro-mirror device, comprising a plurality of second micro-mirrors disposed thereon; and

a projection light source, emitting a projection beam toward the first digital micro-mirror device;

wherein the first digital micro-mirror device reflects the projection beam from the projection light source to the second digital micro-mirror device, the first micro-mirror is rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the second digital micro-mirror device, the second digital micro-mirror device reflects the projection beam from the first digital micro-mirror device to the projection plate, and the second micro-mirrors are rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on the projection plate,

wherein the first digital micro-mirror device further comprises an opening, through which the projection beam reflected from the second digital micro-mirror device is projected on the projection plate.